

FIG. 1

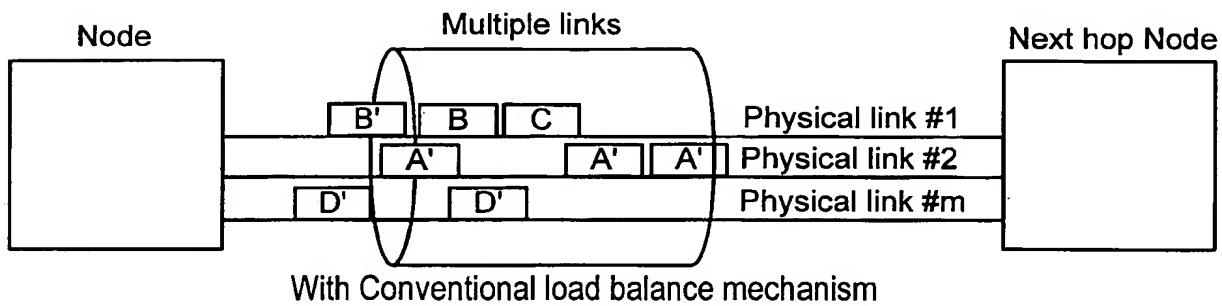


FIG. 2

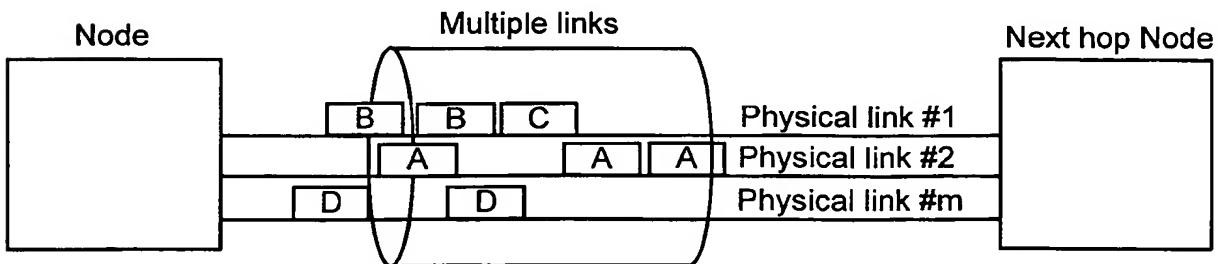
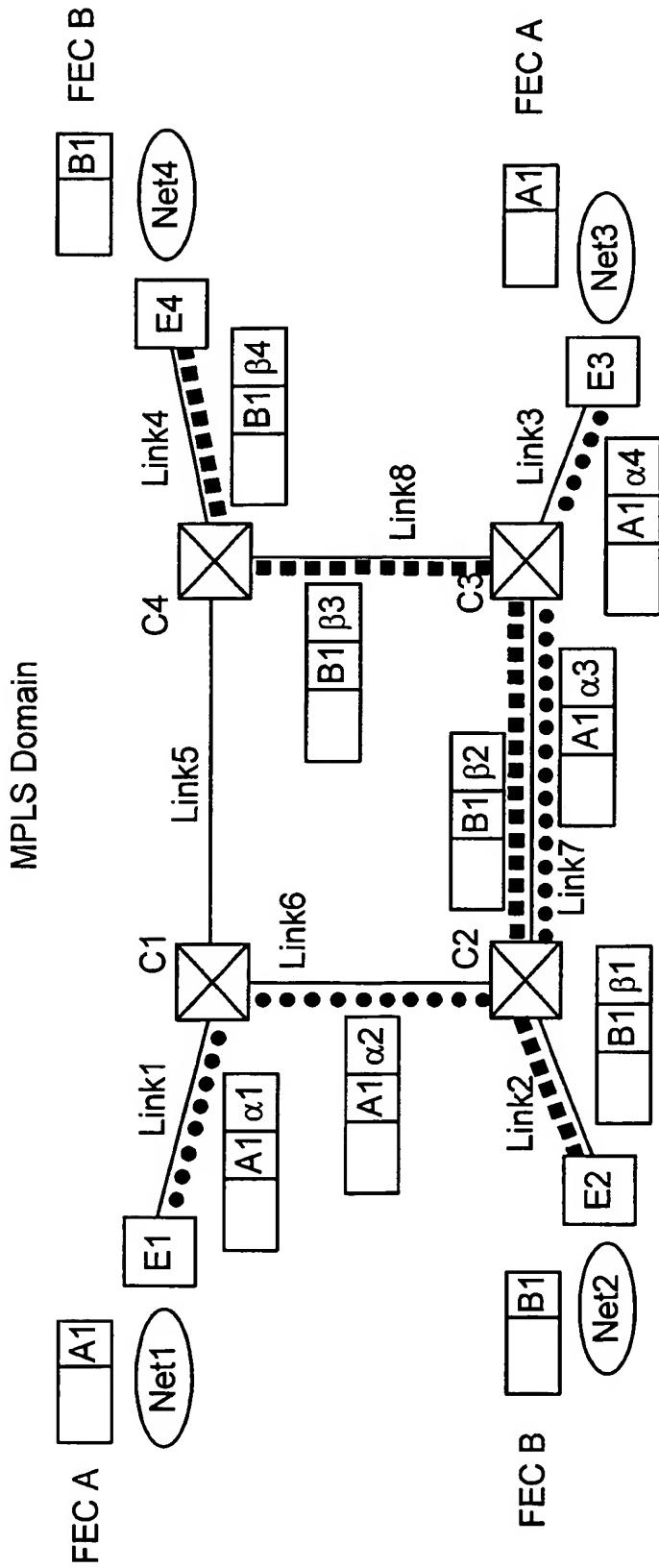


FIG. 3





C1, C2, C3, C4: Label Switch Router (CORE), E1, E2, E3, E4: Label Switch Router (Edge),
 A1, B1: IP Destination Address, $\alpha_1, \alpha_2, \alpha_3, \alpha_4, \beta_1, \beta_2, \beta_3, \beta_4$: Label
 Example of the network (MPLS) domain

FIG. 4

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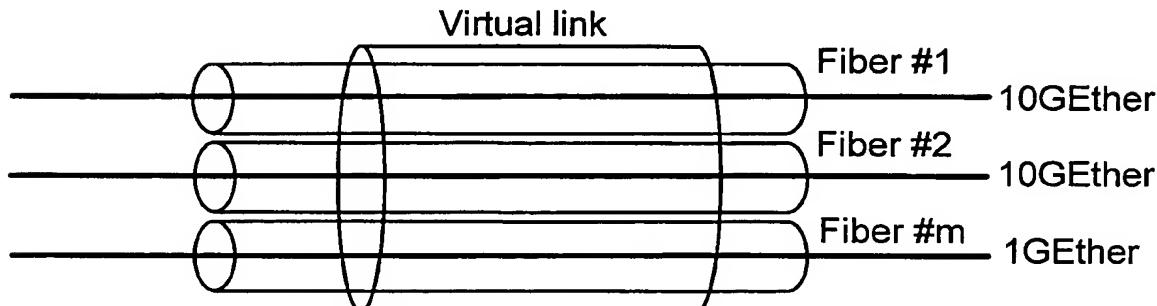


FIG. 5A

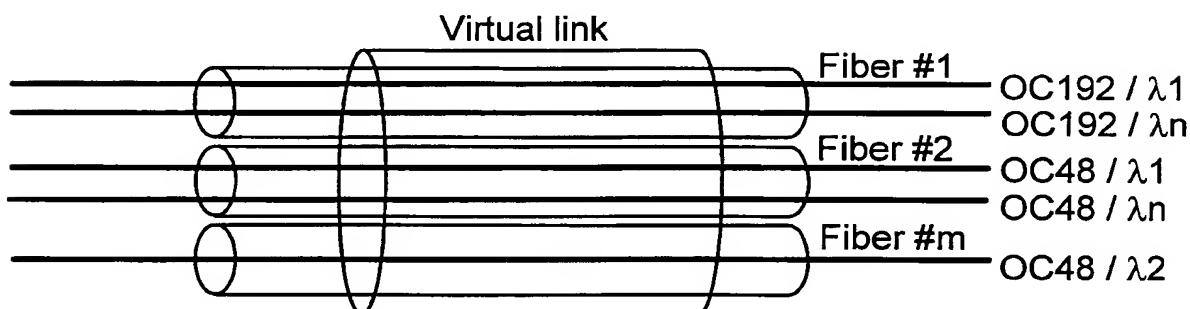


FIG. 5B

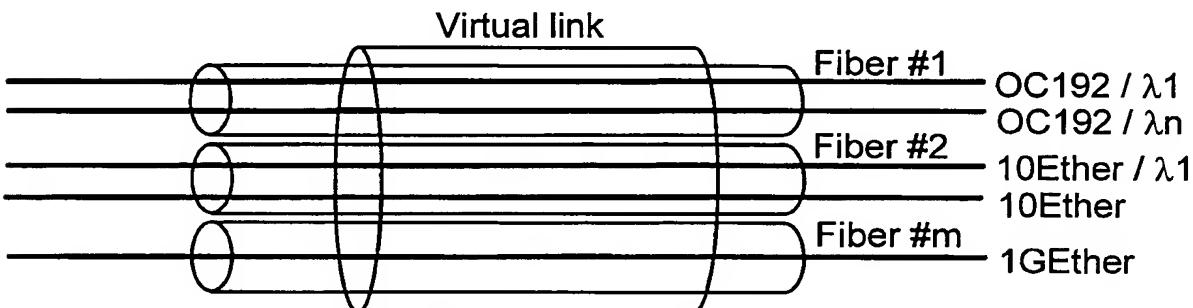


FIG. 5C

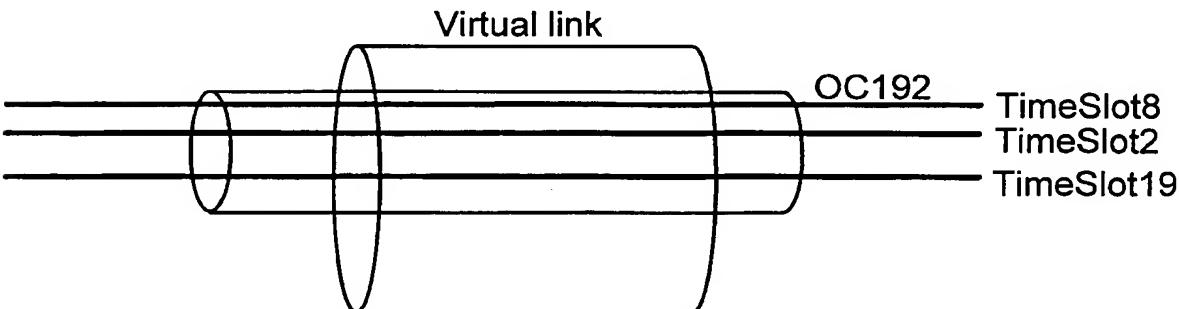


FIG. 5D

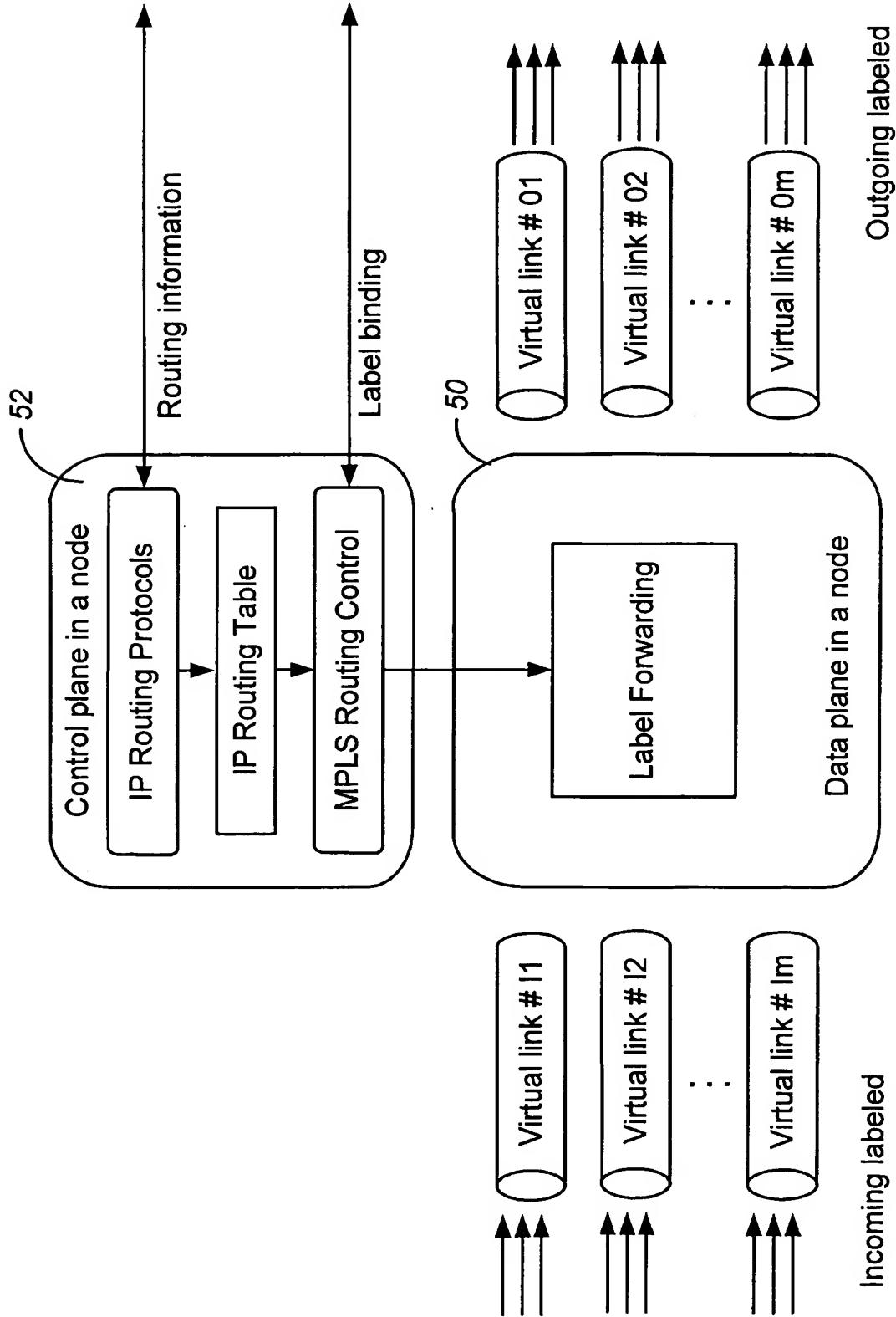


FIG. 6 LSR Architecture

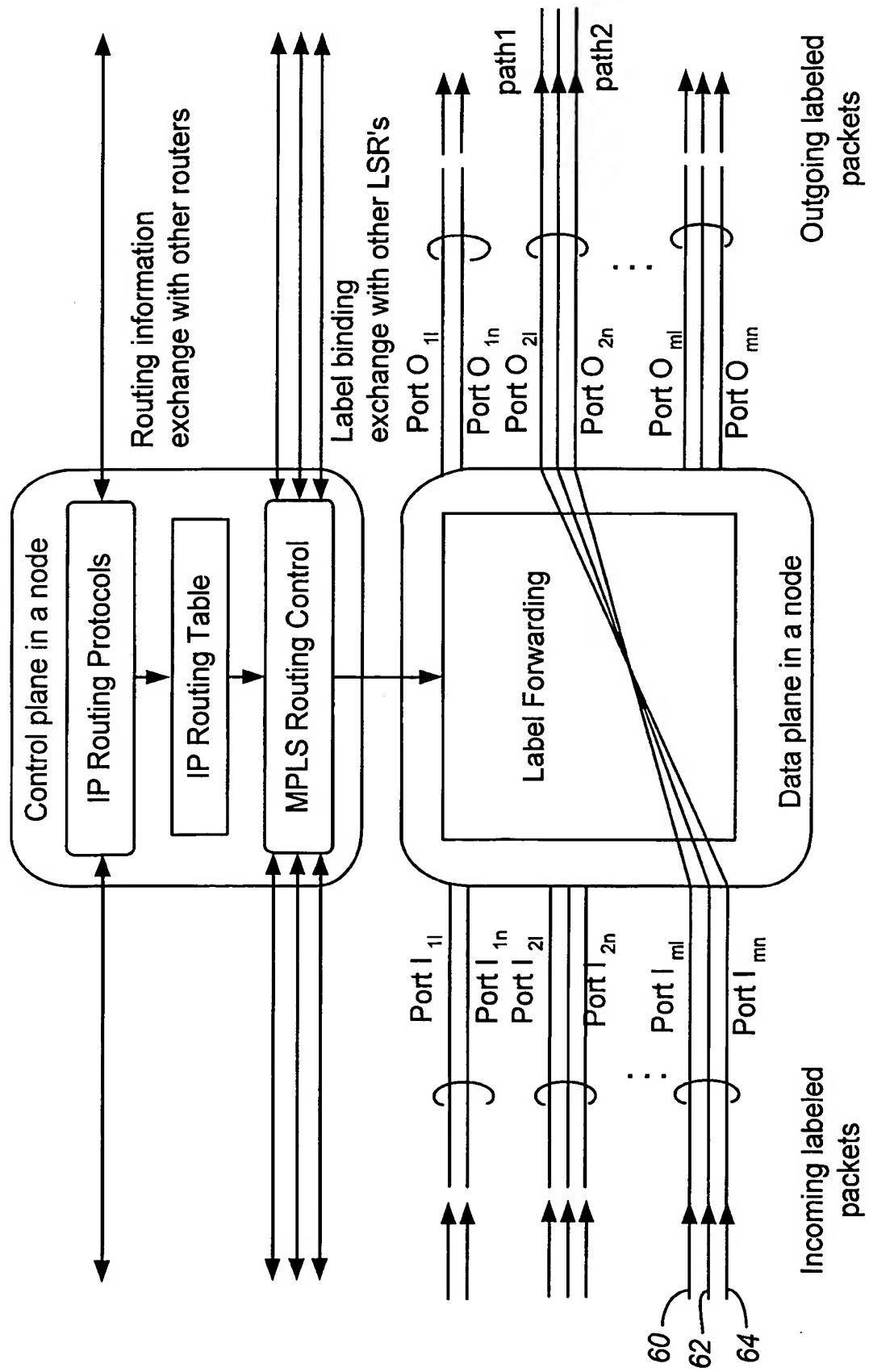


FIG. 7

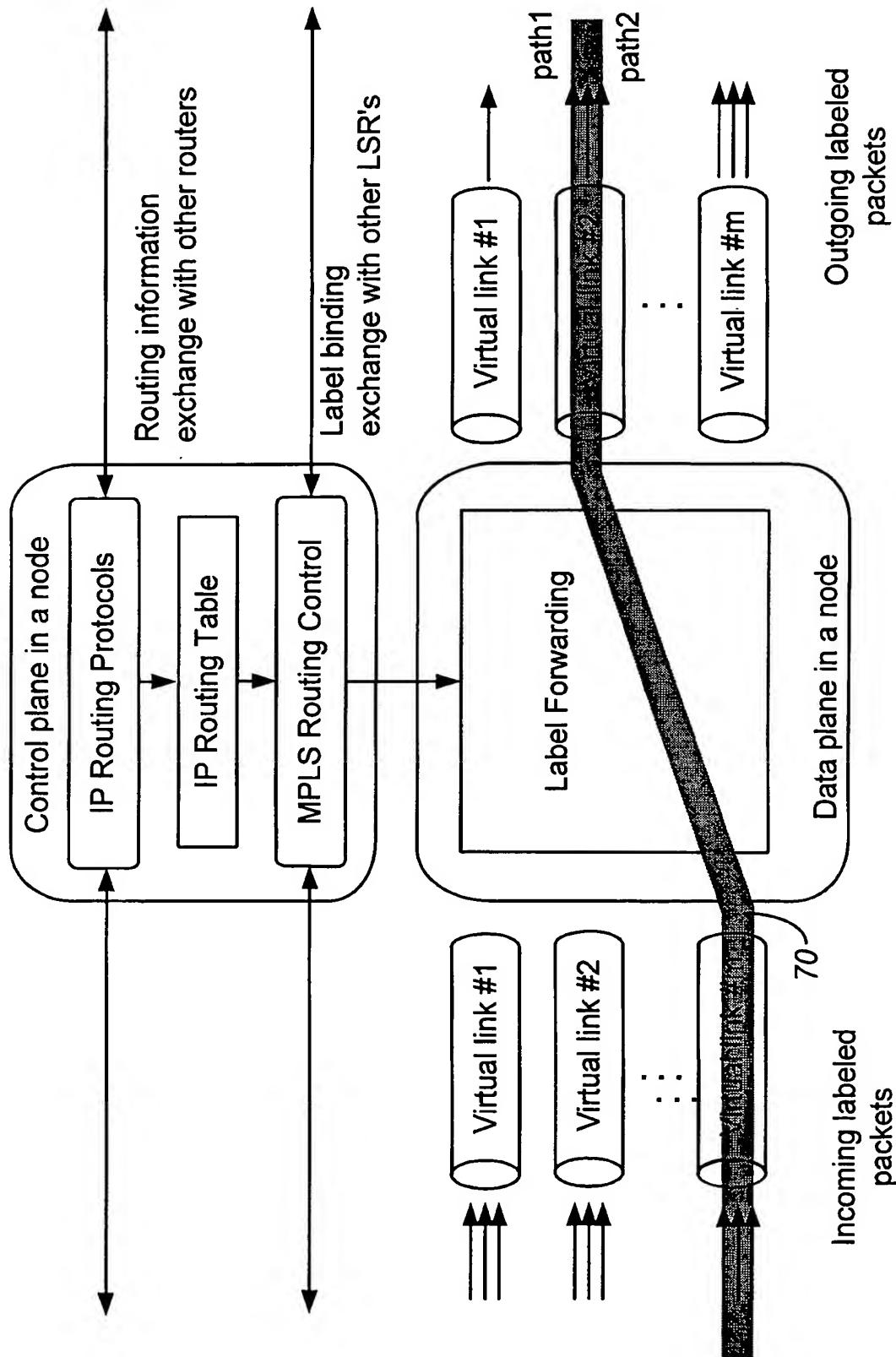


FIG. 8

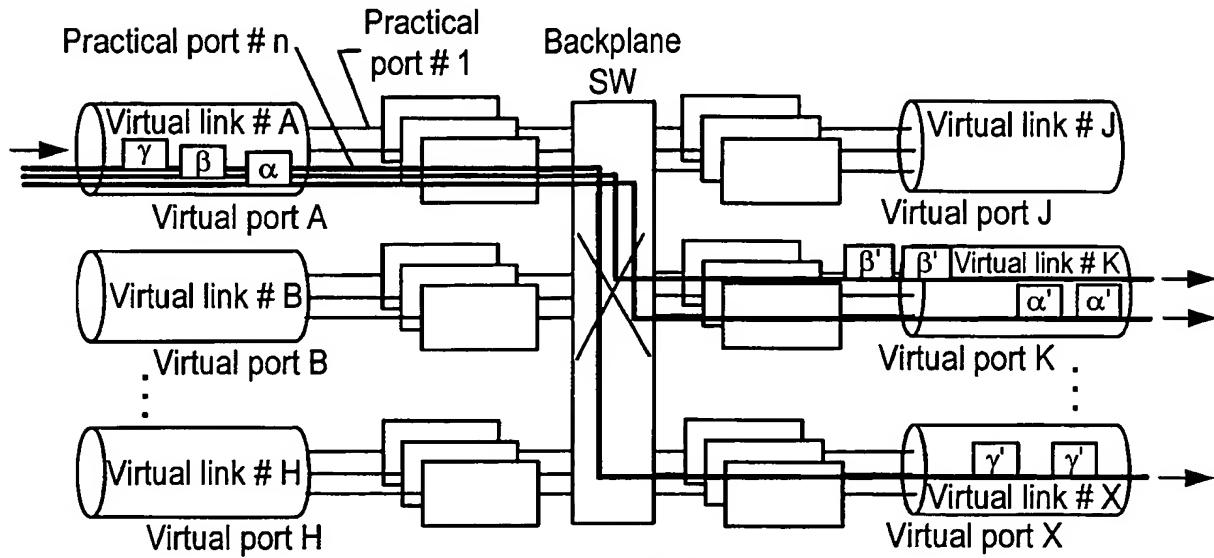


FIG. 9A

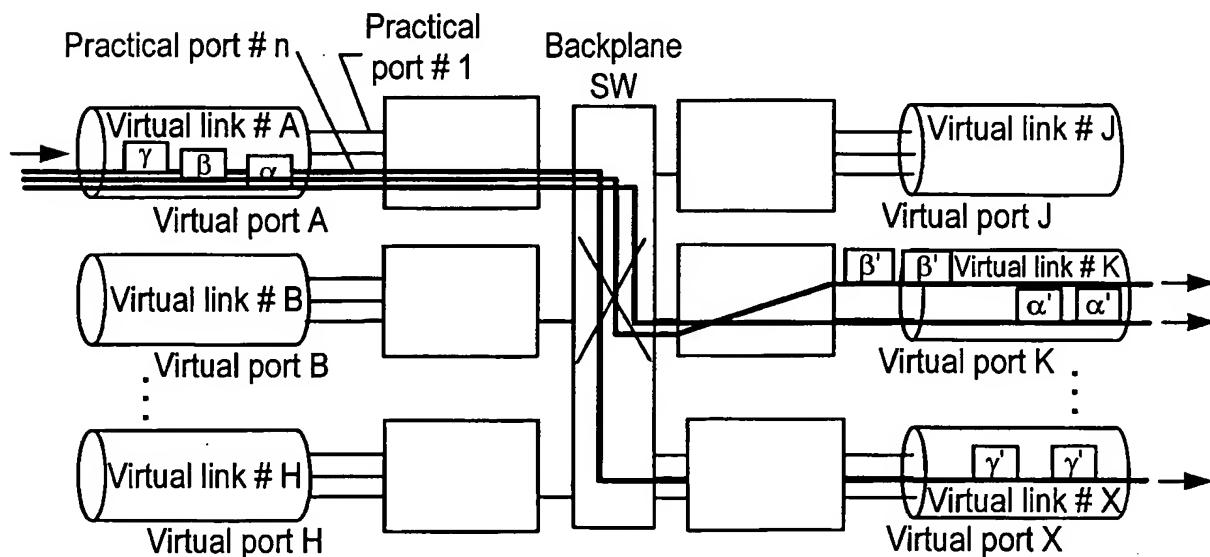


FIG. 9B

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		Label Forwarding Table maintained by the MPLS control plane					
		Input virtual port#		Input Label	Output Label	Output virtual port#	Output practical port#
n	A	A	α'	K	$f(\alpha')$		
n	A	β'	β'	K	$f(\beta')$		
n	A	γ'	γ'	X	$f(\gamma')$		
2	A	δ'	δ'	B	$f(\delta')$		
1	A	ε'	ε'	B	$f(\varepsilon')$		
2	A	ζ'	ζ'	H	$f(\zeta')$		
1	A	η'	η'	J	$f(\eta')$		
5	A	σ'	σ'	K	$f(\sigma')$		
n	A	κ'	κ'	X	$f(\kappa')$		

Label Forwarding Table and mechanism to decide practical output port at the sending LSR

FIG. 10

Tag	Hash value of incoming label	Input practical port#	Input virtual port#	Input Label	Output Label	Output virtual port#	Output practical port#
O	$f(\alpha')$	n	A	α'	α''	K	$f(\alpha'')$
O	$f(\beta')$	n	A	β'	β''	K	$f(\beta'')$
O	$f(\gamma')$	n	A	γ'	γ''	X	$f(\gamma'')$
O	$f(\delta')$	2	A	δ'	δ''	B	$f(\delta'')$
O	$f(\varepsilon')$	1	A	ε	ε''	B	$f(\varepsilon'')$
O	$f(\zeta')$	2	A	ζ	ζ''	H	$f(\zeta'')$
O	$f(\eta')$	1	A	η	η''	J	$f(\eta'')$
O	$f(\sigma')$	5	A	σ	σ''	K	$f(\sigma'')$
O	$f(\kappa')$	n	A	κ	κ''	X	$f(\kappa'')$

First lookup mechanism using a hash

FIG. 11